

INCH-POUND

MIL-DTL-83513/22C  
27 February 2003  
SUPERSEDING  
MIL-PRF-83513/22B  
15 August 1997

# DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, RECTANGULAR, PLUG, MICROMINIATURE,  
POLARIZED SHELL, STRAIGHT, PIN CONTACTS, 2 ROW, SOLDER TYPE,  
9 THROUGH 37 CONTACTS, PRINTED CIRCUIT BOARD

This specification is approved for use by all Departments and  
Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification and MIL-DTL-83513.

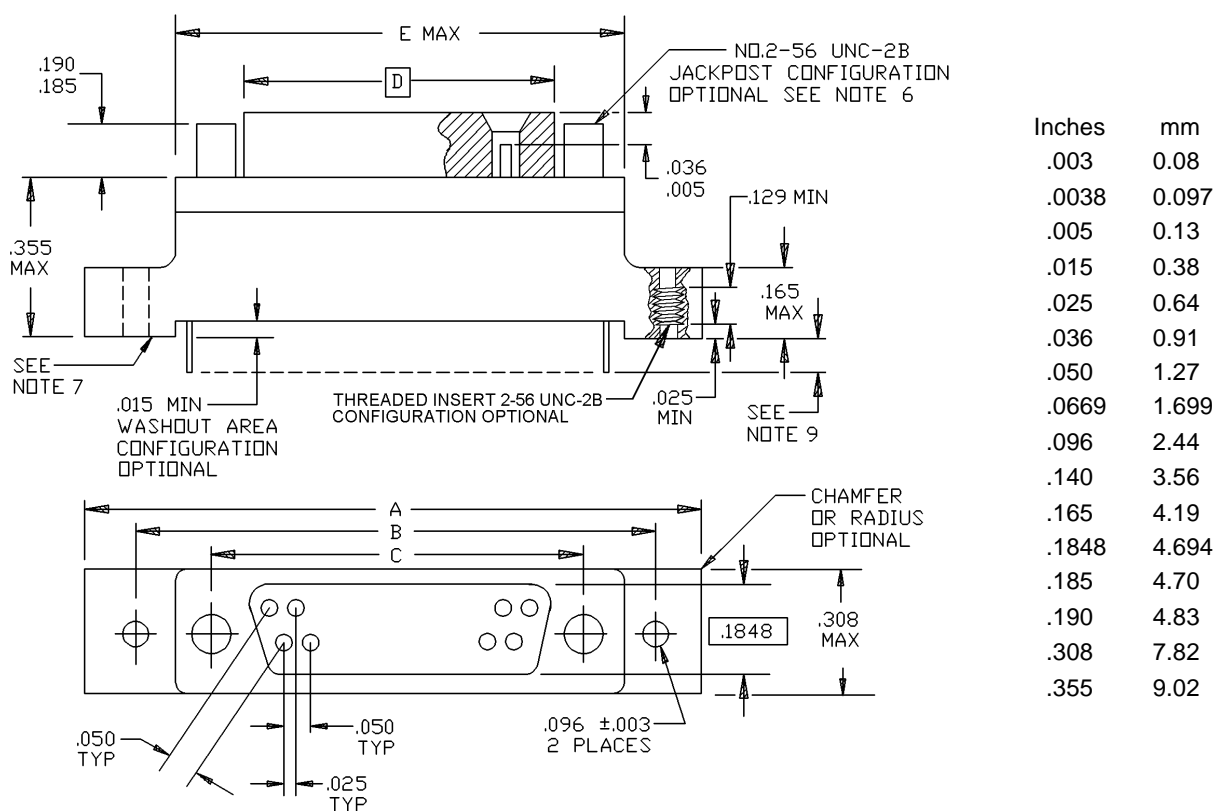
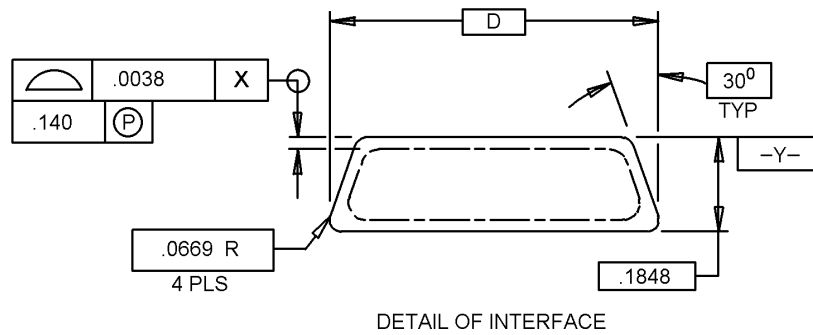


FIGURE 1. Connector plug, .050 spacing.

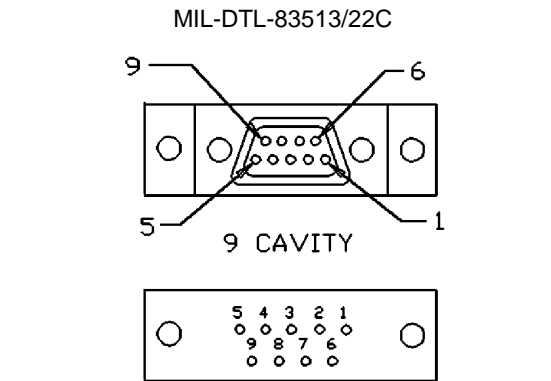


Number of contacts	A Max	B ±.007 (0.18 mm)	C ±.005 (0.13 mm)	D	E Max
9	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.3338 (8.478)	.885 (2.48)
15	1.390 (31.31)	1.150 (29.21)	.715 (18.16)	.4838 (12.289)	.945 (24.00)
21	1.690 (40.64)	1.450 (36.83)	.865 (21.97)	.6338 (16.099)	1.185 (30.10)
25	1.740 (44.20)	1.500 (38.10)	.965 (24.51)	.7338 (18.639)	1.275 (32.39)
31	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	.8838 (22.449)	1.575 (40.01)
37	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.0338 (26.259)	1.875 (47.63)

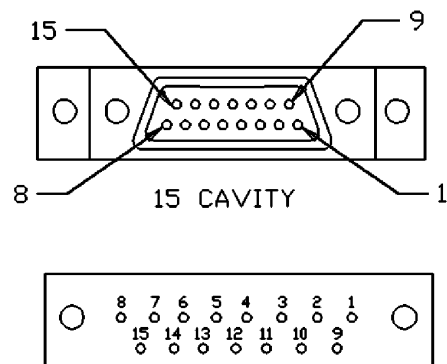
## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerances are  $\pm 0.005$  inch (0.13 mm).
4. Termination organization area to be optionally molded or filled with a potting fill material capable of passing the electrical and environmental requirements of MIL-DTL-83513. Plastic molding shall conform to type GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.
5. Metal shell shall be of material in accordance with MIL-DTL-83513 for class M parts.
6. Jackpost (permanently attached), when specified: Corrosion resistant steel in accordance with ASTM A484 and ASTM A582, 300 series stainless steel, passivated in accordance with SAE-AMS-QQ-P-35
7. Separately molded plastic body (if used) shall conform to type GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.
8. Wire termination pins shall conform to A-A-59551, number 24 AWG copper.
9. Termination lengths available: .109 inch (2.77 mm), .140 inch (3.56 mm) or .172 inch (4.37 mm). The tolerance shall be  $\pm 0.015$  inch (0.381 mm) for all termination lengths.
10. Threaded insert, when specified: Corrosion resistant steel in accordance with ASTM A484 and ASTM A582, 300 series stainless steel, passivated in accordance with SAE-AMS-QQ-P-35.

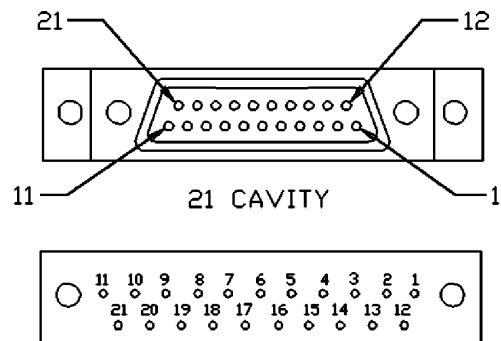
FIGURE 1. Connector plug, .050 spacing - Continued.



TERMINATION VIEW - VERTICAL MOUNT



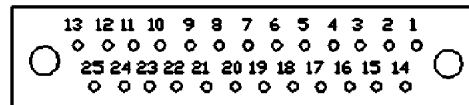
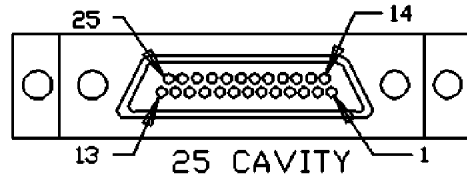
TERMINATION VIEW - VERTICAL MOUNT



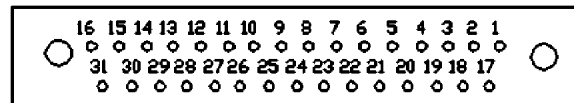
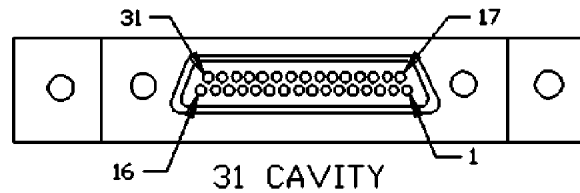
TERMINATION VIEW - VERTICAL MOUNT

NOTE: Engaging face of pin insert shown, cavity identification numbers are for reference only and do not appear on the part.

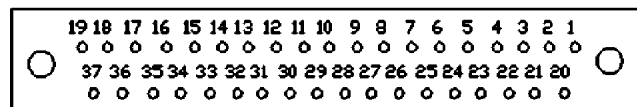
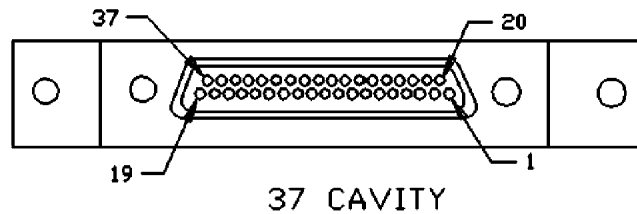
FIGURE 2. Insert arrangement.



TERMINATION VIEW - VERTICAL MOUNT



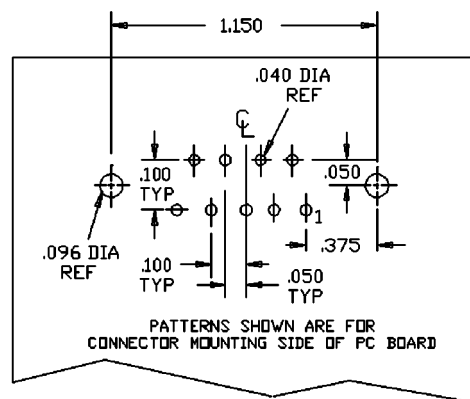
TERMINATION VIEW - VERTICAL MOUNT



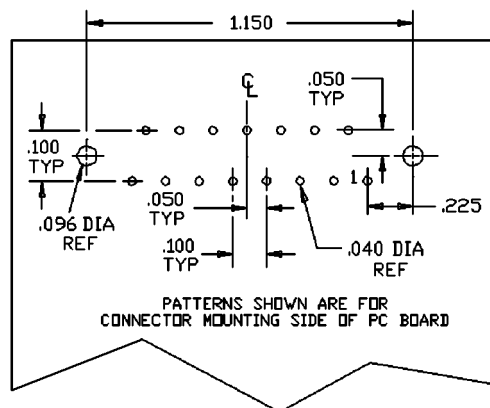
TERMINATION VIEW - VERTICAL MOUNT

NOTE: Engaging face of pin insert shown, cavity identification numbers are for reference only and do not appear on the part.

FIGURE 2. Insert arrangement - Continued.

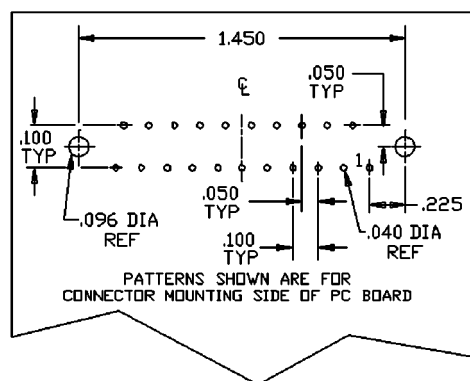


9 CONTACT PLUG



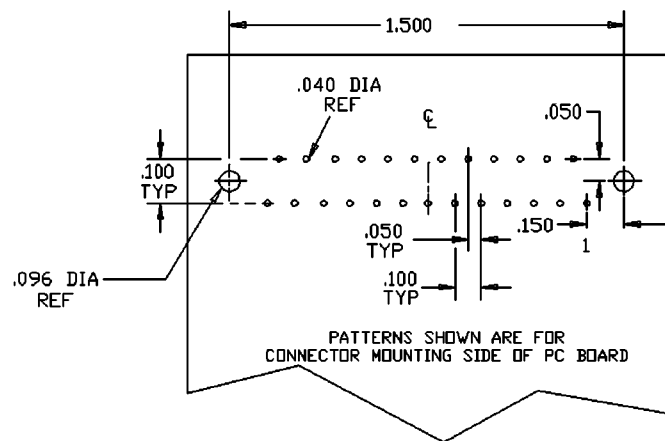
15 CONTACT PLUG

Inches	mm
.040	1.02
.050	1.27
.096	2.44
.100	2.54
.150	3.81
.225	5.72
.375	9.53
1.150	29.21
1.450	36.83
1.500	38.10
1.800	45.72
2.100	53.34

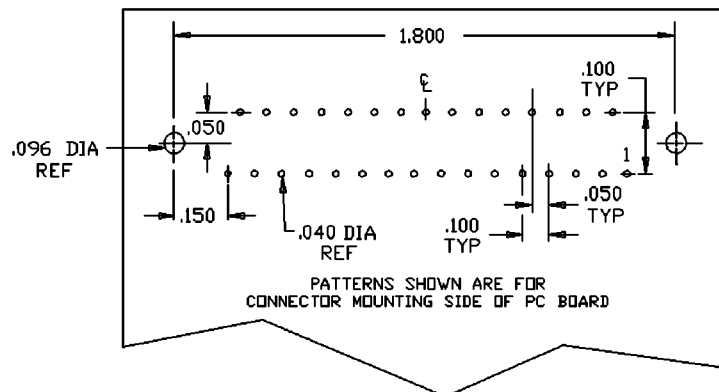


21 CONTACT PLUG

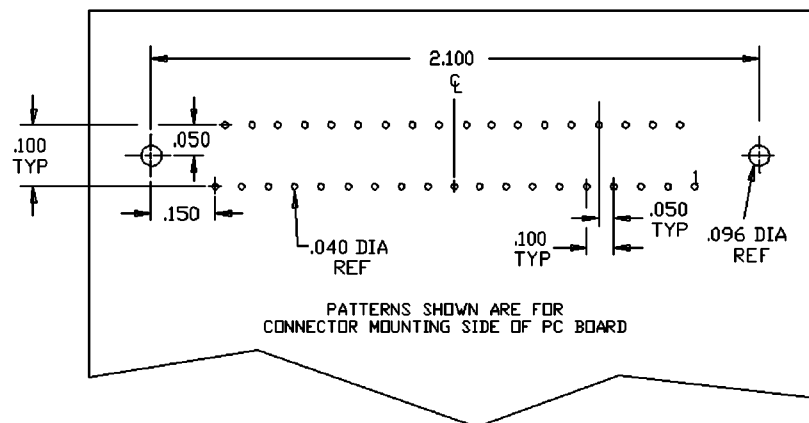
FIGURE 3. Layout arrangement.



25 CONTACT PLUG



31 CONTACT PLUG



37 CONTACT PLUG

FIGURE 3. Layout arrangement - Continued.

# MIL-DTL-83513/22C

## REQUIREMENTS:

Dimensions and configurations: See figures 1, 2, and 3.

Current rating, maximum: 3 amperes per contact.

### Materials:

Termination organization area: Potting fill material capable of passing the electrical and environmental requirements of MIL-DTL-83513.

Shell: The requirements for shell materials shall be in accordance with MIL-DTL-83513.

Plastic body or plastic molding: Shall conform to the requirements of GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.

### Jackpost:

Corrosion resistant steel in accordance with ASTM A484 and ASTM A582, 300 series stainless steel, passivated in accordance with SAE-AMS-QQ-P-35.

Wire termination pins: Wire termination pins shall conform to A-A-59551, number 24 AWG copper.

Mating connector: Shall conform to MIL-DTL-83513/2 and MIL-DTL-83513/4.

Plating of termination leads: Solder dipping of termination leads will be accomplished in SN60 PB40 or SN63 PB37 in accordance with J-STD-006.

Part or Identifying Number (PIN): PIN shall consist of the letter M, the basic number of the specification sheet, a letter from the insert, a numerical code for the termination length, and a letter code for the shell finish and hardware column.

<u>M83513/22-</u>	<u>D</u>	<u>01</u>	<u>C</u>	<u>P</u>
Specification sheet number	Insert arrangements (see figure 2)	Termination length	Shell finish (Interface critical)	Hardware
	A = 9	01 = .109	C = cadmium	N = no jackpost or threaded insert
	B = 15	02 = .140	N = electroless nickel	P = jackpost attached
	C = 21	03 = .172	(space application)	T = threaded insert
	D = 25		P = passivated stainless steel	W = jackpost and threaded insert
	E = 31			
	F = 37			

## CONCLUDING MATERIAL

### Custodians:

Army - CR  
Navy - EC  
Air Force - 11  
NASA - NA  
DLA - CC

Preparing activity:  
DLA - CC

(Project: 5935-4310-022)

### Review activities:

Army - AT, CR4, MI  
Navy - AS, CG, MC, SH  
Air Force - 99